

HARNESS SYSTEM FOR ATTACHING CAMERA TO USER

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RELATED APPLICATIONS

[0001] The present application is related to, and claims priority to under 35 USC § 119(e), U.S. Patent Application Serial Number 60/462,548, entitled "Harness for Attaching Camera to User," by Nicholas D. Woodman, filed on April 10, 2003, U.S. Patent Application Serial Number 60/468,368, also entitled "Harness for Attaching Camera to User," by Nicholas D. Woodman, filed on May 5, 2003, and U.S. Patent Application Serial Number 60/473,367 also entitled "Harness for Attaching Camera to User," by Nicholas D. Woodman, filed on May 23, 2003, which the contents of each are incorporated by reference.

BACKGROUND OF THE INVENTION

1. Field of Invention

[0002] This invention relates to mechanisms for securing devices such as a camera strap, and more specifically, to an improved harness system for attaching a device such as a camera to a human for use during periods of physical activity.

2. Description of the Related Arts

[0003] The problem of conveniently carrying, accessing, and using a camera under various operating conditions has existed since the beginning of hand-held photography. It has become even more of a problem in recent years as a growing number of photographers attempt to take action photographs while participating in fast-paced physical activities such as surfing,

snorkeling, skiing, mountain biking, kayaking, rafting and so on. Activities such as these often leave a photographer without pockets, purses, or even enough time to fetch a camera from such a place if he or she hopes to get a photo of the action while it is occurring.

[0004] Even in the event that a photographer is able to quickly access a camera during such an activity, an accidental fall or change of circumstances could make it difficult for the photographer to hold on to the camera. The camera could be damaged, broken or lost altogether in the event that the photographer might quickly need both of his or her hands free to ensure his or her safety. It is possible that people would take more photographs, and even better photographs, during their favorite physical activities if there was a convenient way for them to carry, quickly access, and then securely use a camera at such a time.

[0005] Another problem with taking photographs during fast-paced physical activities is the question of what to do with the camera after a photograph has been taken. For example, a surfing photographer taking a photograph of a breaking wave might quickly need his or her hands free to push their surfboard under the wave after taking the photograph. Perhaps a rafting photographer wants to photograph the harrowing view of the rapids just before entering them, but he or she might immediately thereafter need both hands free to brace themselves or to steer the raft. In either case, the photographer may not have enough time to securely store the camera after taking a photograph.

[0006] Additionally, the photographer might just prefer to have the camera immediately out of the way so that he or she can enjoy the given activity without the hassle of stowing their camera. Whatever the circumstance, there is currently no solution that solves the problems associated with conveniently carrying, quickly accessing, securely using and then quickly

stowing a camera during periods of physical activity such as surfing, snorkeling, kayaking, rafting, etc.

[0007] There have been attempts to provide a solution to these problems. For years, rubber bands and wrist or neck ropes have been included with new cameras in an effort to provide the photographer with a convenient way to carry the camera. While this may suffice for a walk in the park, surfing a wave or rafting the rapids with a camera swinging wildly from one's wrist or neck is a less than ideal or safe way to carry a camera while participating in such an activity. Either the photographer, the camera, or people nearby may be harmed by the swinging camera.

[0008] The camera could be easily lost if the photographer is unable to adequately clutch the rubber band or nylon strap draped around their wrist. And while this method of carrying a camera does provide for immediate access to the camera, it unfortunately does not allow the user to have both hands free for participating in the given activity when the camera is not needed. In this way, a simple rubber band or nylon strap solution handicaps the photographer's participation in and enjoyment of the given activity and to a certain extent sacrifices their own safety and the safety of the camera.

[0009] Hence, conventional devices or solutions fail to provide adequate means for a photographer to conveniently carry, access, securely hold and use, and then quickly stow away a camera while participating in a physical activity. Therefore, there is a need for a solution that allows for carrying a camera in a further secured position, provides quick access to for holding and using the camera while still remaining secured to the user, and then quickly stowing the camera into the aforementioned further secured position.

SUMMARY OF THE INVENTION

[0010] The present invention includes a harness for attaching a camera to a user's body, for example, an appendage (or portion thereof) such as an arm, wrist, leg, or angle, in a manner that allows for the camera to be moved pivotably into various positions for the purpose of convenient carrying and/or taking a photograph while engaged in a physical activity. Moreover, in one embodiment of the present invention, as the camera is moved in any pivoted orientation it remains coupled to the harness. Hence, the present invention beneficially allows the camera to remain secured to the appendage of the user even in the event that the user is unable to use a hand to hold the camera.

[0011] In accordance with the present invention, the camera harness allows a user to comfortably, conveniently, and securely carry a camera while participating in a physical activity in a manner which does not handicap their participation in the aforementioned activity. The camera harness also allows a user to quickly access a camera for use while participating in a physical activity.

[0012] In further embodiments of the present invention, the camera harness may be configured to allow a user to securely hold and pivot a camera into an upright position which allows them to easily and clearly look through the camera's viewfinder or see an LCD screen, while participating in a physical activity. It is noted that the camera harness allows a user to retain possession of a camera even in the event of an accident or change of events which forces the user to let go of the camera, while participating in a physical activity. Moreover, the camera harness allows a user to pivot and quickly re-secure a camera into a further secured flat carry position on his or her wrist after taking a photo. In yet another embodiment of the present invention, the camera harness is also configured to be small enough to fit in a user's clothing

pocket, purse, or other enclosure when it is not being worn or attached to a camera or camera housing. Hence, the camera harness is beneficially simple to use, carry, and otherwise transport.

[0013] In yet another embodiment, the camera harness maybe configured to be adjustable so that it can be comfortably worn by people of all sizes. The camera harness may also be configured to adapt to, fit and secure a wide range of cameras that may range in shape, size, and even type. The present invention may also be configured to have at least a portion of the harness system or element thereof be incorporated into a camera body or camera housing. In yet another embodiment, the camera harness, including any portion or element of the harness system that may be incorporated into a camera body or camera housing, and may be configured to attach a camera to a user in either a fixed flat, fixed upright, or fixed partially-upright, non-pivoting position.

[0014] In another embodiment, the camera harness, including any portion or element of the harness system that may be incorporated into a camera body or camera housing, may be configured to attach a camera to a user in a manner that secures the camera in a first secured position flat to their arm or wrist, but also allows the user to stretch or pull the camera into a second secured upright position for the purpose of taking a photograph. Upon the user's release of tension on the camera, the camera returns to the first secured position flat against the arm or wrist of the user.

[0015] The present invention may be configured from a variety of materials. In one embodiment the camera harness may be configured from commercially available lightweight structural components including but not limited to, e.g., nylon, plastic, foam, polypropylene, webbing, rubber, neoprene, rubber, elastic cord, elastic fabric, single or double sided tape, laminated adhesive, and/or Velcro®, that can be configured in a manner that limits the total

number of parts needed to construct the harness, while improving reliability, durability, simplicity, and lowering the cost of manufacturing. Thus, the camera advantageously can be used in a wide range of activities and environments. Moreover, the camera harness can be beneficially produced in an economical and rapid manner. This should allow the present invention to be appealing to all types of consumers, manufacturers and retailers involved in photography. Moreover, the present invention allows photographers to become active participants in the activities or along side the subject matter that they are photographing, rather than having to take photographs from the sidelines or from a distance.

[0016] The features and advantages described in the specification are not all inclusive and, in particular, many additional features and advantages will be apparent to one of ordinary skill in the art in view of the drawings, specification, and claims. Moreover, it should be noted that the language used in the specification has been principally selected for readability and instructional purposes, and may not have been selected to delineate or circumscribe the inventive subject matter.

BRIEF DESCRIPTIONS OF THE DRAWINGS

[0017] The invention has other advantages and features which will be more readily apparent from the following detailed description of the invention and the appended claims, when taken in conjunction with the accompanying drawings, in which:

[0018] Figure ("Fig.") 1 shows a perspective view of the invention in an open and extended position.

[0019] Fig. 1b shows a perspective view of a first alternative embodiment of the invention.

[0020] Fig. 1c shows a perspective view of a second alternative embodiment of the invention with a spring loaded coupling plate.

[0021] Fig. 1d shows a perspective view of a third alternative embodiment of the invention with a tongue of hook material extending from the invention.

[0022] Fig. 1e shows a perspective view of a fourth alternative embodiment of the invention with a male clip attached to the invention.

[0023] Fig. 1f shows a perspective view of a fifth alternative embodiment of the invention with a spring loaded coupling plate and no catch, hook, or hook ring.

[0024] Fig. 1g shows a perspective view of a sixth alternative embodiment of the invention with a spring-loaded clip attached to the invention.

[0025] Fig. 1h shows a perspective view of a seventh alternative embodiment of the invention with a static clip attached to the invention.

[0026] Fig. 1i shows a perspective view of an eighth alternative embodiment of the invention with a tongue of hook material attached to the invention.

[0027] Fig. 1j shows a perspective view of a ninth alternative embodiment of the invention with a tongue of hook material attached to the invention.

[0028] Fig. 1k shows a perspective view of a tenth alternative embodiment of the invention with a viewing hole integrated into it.

[0029] Fig. 1l shows a perspective view of an eleventh alternative embodiment of the invention with an attachment pad fastened to it.

[0030] Fig. 1m shows a perspective view of a twelfth alternative embodiment of the invention.

- [0031] Fig. 2 shows a perspective view of the invention in a semi-closed or semi-cinched position.
- [0032] Fig. 3 shows a perspective view of the invention being worn on the left wrist of a user.
- [0033] Fig. 3a shows a perspective view of a user taking a photo while wearing the invention.
- [0034] Fig. 3b shows a perspective view of the invention on the wrist of a user with the camera attached to the invention in an upright position and not being held by the user.
- [0035] Fig. 4 shows a bottom perspective view of the harness being worn on the left wrist of a user.
- [0036] Fig. 5 shows a perspective view of the hook piece.
- [0037] Fig. 6 shows a perspective view of the catch piece.
- [0038] Fig. 7 shows a perspective view of the coupling plate.
- [0039] Fig. 8a shows a perspective view of a camera body with a catch piece integrated on the top of the camera.
- [0040] Fig. 8b shows a perspective view of a camera body with a catch piece integrated into the top of the camera body.
- [0041] Fig. 8c shows a perspective view of a camera body with an extended bar integrated on the back of the camera body.
- [0042] Fig. 8d shows a perspective view of a camera body with a recessed groove and bar integrated into the back of the camera body.

[0043] Fig. 8e shows a perspective view of a camera body with a female clip integrated onto the bottom of the camera body.

[0044] Fig. 8f shows a perspective view of a camera body with an extended bar integrated with the camera body.

[0045] Fig. 8g shows a perspective view of a camera body with an extended bar integrated onto the back of the camera body.

[0046] Fig. 8h shows a perspective view of a camera body with a recessed groove and bar integrated into or onto the back of the camera body.

[0047] Fig. 8i shows a perspective view of a camera body with two extended bars on the back of the camera body.

[0048] Fig. 8j shows a perspective view of two recessed groove and bars integrated into or onto the back of the camera body.

[0049] Fig. 8k shows a perspective view of a camera body with an extended bar integrated onto the top back corner of the camera body and second extended bar integrated onto the bottom back corner of the camera body.

[0050] Fig. 8l shows a perspective view of a camera body with an extended bar integrated onto the top back corner of the camera body and a recessed groove and bar integrated onto or into the back of the camera body.

[0051] Fig. 8m shows a perspective view of a camera body with three extended bars integrated onto the camera body.

[0052] Fig. 8n shows a perspective view of a camera body with a hook integrated onto the top of the camera body.

[0053] Fig. 9a shows a perspective view of a camera housing with the catch piece integrated on the top of the camera housing.

[0054] Fig. 9b shows a perspective view of a camera housing with the catch piece integrated into the top of the camera housing.

[0055] Fig. 9c shows a perspective view of a camera housing with an extended bar integrated on the back of the camera housing.

[0056] Fig. 9d shows a perspective view of a camera housing with a recessed groove and bar integrated into the back of the camera housing.

[0057] Fig. 9e shows a perspective view of a camera housing with a female clip integrated onto the bottom of the camera housing.

[0058] Fig. 9f shows a perspective view of a camera housing with an extended bar integrated with the camera housing.

[0059] Fig. 9g shows a perspective view of a camera housing with an extended bar integrated onto the back of the camera housing.

[0060] Fig. 9h shows a perspective view of a camera housing with a recessed groove and bar integrated into or onto the back of the camera housing.

[0061] Fig. 9i shows a perspective view of a camera housing with two extended bars on the back of the camera housing.

[0062] Fig. 9j shows a perspective view of two recessed groove and bars integrated into or onto the back of the camera housing.

[0063] Fig. 9k shows a perspective view of a camera housing with an extended bar integrated onto the top back corner of the camera housing and second extended bar integrated onto the bottom of the camera housing.

[0064] Fig. 9l shows a perspective view of a camera housing with an extended bar integrated onto the top back corner of the camera housing and a recessed groove and bar integrated onto or into the back of the camera housing.

[0065] Fig. 9m shows a perspective view of a camera housing with three extended bars integrated onto the camera housing.

[0066] Fig. 9n shows a perspective view of a camera housing with a hook integrated onto the top of the camera housing.

DETAILED DESCRIPTION OF THE INVENTION

[0067] The present invention includes a camera harness and improved camera body and improved camera housing to secure a camera in a first secure position to a user while the camera is not in use and allowing for pivotably moving the camera into a picture-taking position to take a picture while remaining secured to the camera harness in a second secure position. Further, the present invention allows for quickly returning the camera to the first secure position once the user completes taking the picture. Further still, the present invention includes and allows for alternative camera harnesses or straps to be attached to the improved camera body and or improved camera housing to secure a camera to a user in a fixed first secure position.

GENERAL STRUCTURAL CONFIGURATION

[0068] Fig. 1 is a perspective view of the harness 1a in an open and extended position, revealing all of its parts in full view. The length and main body of harness 1a is made up of two

lengths of hook and loop material, loop material **17** and hook material **20**, that are joined together to form one unified length of hook and loop material. Loop material **17** and hook material **20** are joined together at union **17b**. The hook and loop fastening sides of both loop material **17** and hook material **20** are facing up in Fig. 1. In a preferred embodiment, union **17b** is an ultrasonic weld, however, union **17b** can be accomplished by any suitable means of fastening two lengths of fabric together, including but not limited to sewing, gluing, stapling, riveting, sealing, tacking, binding, and so on.

[0069] It is noted that in an alternative embodiment the loop material **17** and the hook material **20** may be configured to incorporate the functionality within a unitary structure and may not need the union **17b**. Additionally, in a preferred embodiment the material for the length and main body of harness **1a** is hook and loop material, but any other natural or synthetic material could be used as an alternative, including but not limited to cotton, leather, polypropylene, nylon, rubber, neoprene, plastic and so on.

[0070] Fig. 1 and Fig. 2 illustrate a tag or a pull tab **21** fastened onto the underside and end of hook material **20**. In a preferred embodiment pull tab **21** is folded or doubled over onto itself and its ends are then sewn onto hook material **20**, however, pull tab **21** need not be folded over onto itself and pull tab **21** need not be sewn on as any suitable means of fastening two pieces of fabric together, such as welding, gluing, stapling, riveting, sealing, tacking, etc. will work to attach pull tab **21** to hook material **20**. In a preferred embodiment, pull tab **21** is made out of polypropylene, however pull tab **21** can be made out of any material including but not limited to cotton, rubber, plastic, nylon, neoprene, ribbon, tape, and so on. In one embodiment, pull tab **21** may be optionally eliminated from the present invention.

[0071] Fig. 1 illustrates a loop, o-shaped ring, or hook ring **18** positioned on loop material **17**. The bottom portion of hook ring **18** is held in place and sandwiched against the top side of loop material **17** by a patch **170** that is attached to the topside of loop material **17** at union **170a** and union **170b** on either side of hook ring **18**. Hook ring **18** is free to pivot from left to right and vice versa in Fig. 1 due to its unbinding attachment to loop material **17** provided by patch **170**. In a preferred embodiment, hook ring **18** is made of rubber, however, hook ring **18** can alternately be made of any other type of material including but not limited to neoprene, plastic, metal, fibrous material, fabric, or elastic cord, and so on. In one embodiment, hook ring **18** need not be free to pivot. Hook ring **18** may be of any diameter, thickness, resiliency or stretchiness and may be composed of a variety of materials or components to retain desired stretch and or attachment characteristics. Additionally, hook ring **18** may be of any shape other than that of a ring.

[0072] Additionally, in a preferred embodiment, patch **170** is made of hook and loop material, specifically loop material, however, any material, natural or synthetic, including but not limited to hook material, cotton, polypropylene, nylon, rubber, neoprene, or plastic, etc. could be used as an alternative material for patch **170**. Additionally, patch **170** can be omitted and hook ring **18** can be sewn directly onto loop material **17**. In a preferred embodiment, hook ring **18** is an o-shaped ring, however any shape can serve as a substitute shape for hook ring **18**, including but not limited to a square ring, D-shaped ring, or triangle-shaped ring.

[0073] Additionally, a strip or plurality of strips of any material including but not limited to hook and loop material, nylon, rubber, rubber bands, polypropylene, neoprene, plastic and so on can serve as a substitute for hook ring **18**. In a preferred embodiment, union **170a** and union **170b** are ultrasonic welds, however any suitable means of fastening two pieces of fabric together, such as sewing, gluing, stapling, riveting, sealing, tacking, binding, etc. would work as

an alternative. Additionally, in a preferred embodiment, the bottom of hook ring **18** and patch **170** are positioned on the topside of hook material **17** in Fig. 1, but the bottoms of both hook ring **18** and patch **170** can be positioned and fastened to loop material **17** on the bottom side of loop material **17** as an alternative.

[0074] Fig. 1 illustrates a cinching loop or square ring **14** and a base plate or coupling plate **10** (Fig. 7) attached to the left end of loop material **17**. This is accomplished by folding the end of loop material **17** around and through a pivot channel **10e** (Fig. 7) located on coupling plate **10** and through square ring **14**. The end of loop material **17** is then folded back under and onto itself on the underside of loop material **17** and is fastened to itself at union **17a**. The fold created by folding loop material **17** back under onto itself forms a hinge point or a pivot sleeve **15** that both attaches square ring **14** and coupling plate **10** to loop material **17** in a manner that allows square ring **14** and coupling plate **10** to move pivotably. In one embodiment, square ring **14** need not be able to move pivotably.

[0075] In Fig. 1, square ring **14** is positioned underneath coupling plate **10**. In a preferred embodiment, square ring **14** is made of plastic, however, square ring **14** can be alternately made, molded, machined, or otherwise manufactured out of any other natural or synthetic material including but not limited to different types of plastic, rubber, metal, fabric, alloy, composite, etc. In a preferred embodiment, coupling plate **10** is made of rubber, however coupling plate **10** can be alternately made, molded, machined, or otherwise manufactured out of any other natural or synthetic material including but not limited to different types of plastic, rubber, metal, fabric, alloy, etc. In a preferred embodiment, coupling plate **10** is molded as one piece, however coupling plate **10** can alternately be molded, made or otherwise manufactured as a plurality of pieces that are then attached together by any reasonable means to form coupling plate **10**. Note

that the coupling plate **10** is semi-rigid although alternatively it may also be either rigid or flexible.

[0076] In a preferred embodiment, union **17a** is an ultrasonic weld, however, any suitable means of fastening two pieces of fabric together including but not limited to hook and loop fastening, sewing, gluing, stapling, riveting, sealing, tacking, binding, etc. would work as an alternative. In a preferred embodiment, pivot sleeve **15** is made from a fold in loop material **17**, however, pivot sleeve **15** can be made, machined, molded, or otherwise manufactured from any type of material including but not limited to different types of plastic, rubber, metal, fabric, and so on, whereby the alternate material is then attached to the end of loop material **17** by any means suitable for attaching two pieces of material together, including but not limited to welding, sewing, gluing, stapling, riveting, sealing, tacking, etc.

[0077] Figs. 1, 2, 3, and 4 illustrate rings, bands, or coupling band **10a** and coupling band **10b** protruding from coupling plate **10**. Figs. 3 and 4 show coupling band **10a** and coupling band **10b** stretching around the body of a camera. In a preferred embodiment, coupling band **10a** and coupling band **10b** are molded as a part of coupling plate **10** and are made of rubber, however, coupling plate **10**, coupling band **10a**, and coupling band **10b** can be alternately made, molded, machined, or otherwise fabricated as a single part or separate parts made of any material including but not limited to cord, neoprene, hook and loop material, any type of rubber, nylon, lycra, and so on. Additionally, coupling plate **10**, coupling band **10a**, and coupling band **10b** may be of any color, thickness, size, durometer, flexibility or rigidity to accommodate cameras of varying type, size and shape.

[0078] In one embodiment, coupling band **10a** and coupling band **10b** are described as rings with closed loop shapes, whereas as both coupling band **10a** and coupling band **10b** can

have alternative shapes including but not limited to square shapes, oval shapes, elliptical shapes, or can be open lengths of any material including but not limited to hook and loop material, rubber, neoprene, nylon adhesive tape, adhesive material, and so on. Further, coupling band **10a** and coupling band **10b** may be fabricated as a single part with coupling plate **10**, but alternatively coupling bands **10a** and **10b** can be fabricated as a single separate part or as a plurality of separate parts from coupling plate **10** in which case they can snap to or in any other way attach to coupling plate **10**.

[0079] In a preferred embodiment, coupling band **10a** and coupling band **10b** are both present, however, an alternative embodiment can include only a single coupling band **10a** or a single coupling band **10b**. Additionally, coupling plate **10** can be made in a plurality of pieces that sandwich around coupling band **10a** and coupling band **10b** during the assembly of coupling plate **10**. In a preferred embodiment coupling plate **10** is made of rubber, but alternatively coupling plate **10** can be made of any material including but not limited to plastic, fabric, neoprene, a composite, or metal.

[0080] Figs. 1, 2, and 3 illustrate a clasp or catch piece **13** attached to the top area of coupling band **10a** and coupling band **10b**. Fig. 6 shows a perspective view of catch piece **13**. Catch piece **13** has a recessed cavity or catch cradle **13d** in the front center of its body to receive a hook end **19b** (Fig. 5) of a mating clasp or hook piece **19** (Fig. 5). The mating of catch piece **13** and hook piece **19** keep the camera in a first secured position. As an alternative embodiment, catch cradle **13d** can be omitted from catch piece **13** and a hollow pass-through or channel can serve as a substitute resulting in catch piece **13** having a hollow pass-through center.

[0081] Catch piece **13** is attached to coupling band **10a** and coupling band **10b** by stretching coupling band **10a** and coupling band **10b** to first reduce the cross section diameters of

coupling band **10a** and coupling band **10b** so as to allow coupling band **10a** and coupling band **10b** to then be pulled into anchor groove **13a** (Fig. 6) and anchor groove **13b** (Fig. 6) via a groove channel **13c** (Fig. 6) that runs laterally across the underside of catch piece **13**, as does anchor groove **13a** and anchor groove **13b**. Once coupling band **10a** and coupling band **10b** are positioned within anchor grooves **13a** and **13b** and are no longer being stretched, the cross section diameters of coupling band **10a** and coupling band **10b** will expand within anchor grooves **13a** and **13b** resulting in coupling band **10a** and coupling band **10b** being firmly attached to catch piece **13**.

[0082] In one embodiment, catch piece **13** may be made of a rigid or substantially rigid material, e.g., a plastic. Alternatively, catch piece **13** may be made, molded, machined, or otherwise manufactured out of any other material including, but not limited to, different types of plastic, rubber, metal, alloy, composites and so on. Additionally, in one embodiment groove channel **13c**, groove anchor **13a**, and groove anchor **13b** are positioned on the underside of catch piece **13**.

[0083] Alternatively, groove channel **13c**, groove anchor **13a**, and groove anchor **13b** can be positioned either on the front, back or top-side of catch piece **13**. Additionally, anchor grooves **13a** and **13b** can each have their own individual groove channel **13c**, creating a plurality of groove channel **13c**, rather than sharing a single groove channel **13c**, for example, as illustrated. Alternately, catch piece **13** can have only anchor groove **13a** and not include anchor groove **13b**. Any combination of these alternatives for anchor groove **13a** and anchor groove **13b** and groove channel **13c** can be positioned in any combination either on the top, bottom, side or sides, and or front or back of catch piece **13**.

[0084] Furthermore, in one embodiment, coupling band **10a** and coupling band **10b** and catch piece **13** are separate elements that are attached together to function as a single unit, whereas alternatively, coupling band **10a** and coupling band **10b** and catch piece **13** can be made, molded, machined, or otherwise fabricated as one single part or element, separate or in combination with coupling plate **10**, possibly eliminating the need for groove channel **13c**, groove anchor **13a**, and groove anchor **13b**. A further alternative provides that coupling band **10a** and coupling band **10b** and catch piece **13** and coupling plate **10** can be made, molded, machined, or otherwise fabricated as one single part or element. Additionally, catch piece **13** can be molded or otherwise fabricated as a plurality of separate parts that sandwich around and hold in place coupling band **10a** and coupling band **10b** when joined.

[0085] Figs. 1, 2, and 3 illustrate a hook piece **19** attached to the top end of hook ring **18**. Fig. 3 shows hook piece **19** hooked into, mated, or clasping catch piece **13**. Fig. 5 shows a perspective view of hook piece **19**. Hook piece **19** is attached to hook ring **18** by stretching hook ring **18** to reduce the cross section diameter of hook ring **18** and then pulling hook ring **18** into a cut out channel or anchor groove **19a** located on hook piece **19**. Once hook ring **18** is positioned within anchor groove **19a** (Fig. 5) and hook ring **18** is no longer being stretched, the cross section diameter of hook ring **18** expands within anchor groove **19a** to firmly attach hook ring **18** to hook piece **19**. In a preferred embodiment, hook piece **19** is made of molded plastic, however, hook piece **19** can alternately be made, molded, machined, or otherwise manufactured out of any other material including but not limited to different types of plastic, rubber, fabric, metal, alloy, hook and loop material, and so on.

[0086] In a preferred embodiment, hook ring **18** is attached to hook piece **19** by being sandwiched inside of anchor groove **19a**, but an alternative to this is to clamp, glue, melt, weld,

stitch, sew, bend, tie, rivet or in any other appropriate way attach hook piece **19** to hook ring **18**. Furthermore, anchor groove **19a** is situated on the underside of hook **19** whereas an alternate location is to position anchor groove **19a** on the top side or back end of hook piece **19**. Additionally, hook piece **19** and hook ring **18** are fabricated as separate elements, however hook piece **19** and hook ring **18** can be fabricated, molded, machined, fabricated or otherwise made as one single part or element. One embodiment might have hook **19**, or a part with a similar purpose, attached directly to loop material **17** without hook ring **18**.

[0087] As another alternative embodiment, hook ring **18** and hook piece **19** can be replaced with a single strip or plurality of strips of material including but not limited to hook and loop material, neoprene, rubber, plastic, fabric, or a combination thereof that attaches, connects or otherwise mates with catch piece **13**, coupling band **10a** and or coupling band **10b**, a camera body or camera housing, or hook and loop material that is attached to or otherwise integrated onto or into the body of a camera or a camera housing.

[0088] Figs. 1 and 2 illustrate a strip of material, padding, or a comfort strip **16** attached to the underside of loop material **17**. In a preferred embodiment, comfort strip **16** is sewn to the underside of loop material **17**, but as an alternative, comfort strip **16** can be attached to loop material **17** by any suitable means of fastening two pieces of material together, such as but not limited to gluing, stapling, riveting, sealing, tacking, laminating, binding, etc.

[0089] In one embodiment, the material for comfort strip **16** is neoprene, but any other material, fabric, textile or rubber could be used as an alternative for neoprene including but not limited to cotton, polypropylene, nylon, rubber, foam, etc. Additionally, comfort strip **16** is an included element of harness **1a**, however, as an alternative embodiment of harness **1a** comfort strip **16** can be excluded from harness **1a**. As an additional alternative embodiment, comfort strip

16 and loop material **17** can be combined in the form of a piece of Velcro® laminated neoprene or other Velcro® laminated material or may be a unitary structure that is configured to provide the functionality of loop material **17** and comfort strip **16**. An additional embodiment is to reverse the positioning of loop material **17** and hook material **20** so that loop material **17** replaces hook material **20** and vice versa.

[0090] Fig. 4 illustrates an optional safety cord or safety band **22** that can be attached to a camera's standard wrist strap attachment point, a feature found on most cameras of all types. Once attached to the camera, safety band **22** is then attached to harness **1a** by leading hook material **20** through safety band **22** and sandwiching safety band **22** between hook material **20** and loop material **17** when harness **1a** is cinched and fastened around the wrist or arm of the operator. In a preferred embodiment, safety band **22** is an optional element that can be included or excluded at the operator's discretion. As an alternative to the preferred embodiment, safety band **22** can be an integrated element of harness **1a**. Also in one embodiment, safety band **22** is a rubber band, although any band or strip of any other material could be used as an alternative.

OPERATION AND FUNCTIONALITY

[0091] One embodiment for using harness **1a** in accordance with the present invention is now described, for example, from a perspective of a user (or operator) attaching a camera to his or her left arm or wrist. It is noted that the process and principle described herein may apply to any other appendage or item to which the camera harness **1a** attaches.

[0092] The operator of harness **1a** first stretches coupling band **10a** and coupling band **10b** around a camera's body so that catch piece **13** is positioned on top of the camera, for example, in a position like that shown in Figs. 3, 3a, and 3b. Catch cradle **13d** should be facing the same direction as the camera lens. The operator positions the camera lens in the middle of coupling

band **10a** and coupling band **10b** by adjusting, stretching, or moving coupling band **10a** and coupling band **10b** to either side of the camera lens, as illustrated in Figs. 3 and 3a.

[0093] The user can make the same adjustments to the areas of coupling band **10a** and coupling band **10b** positioned on the back of the camera to position the camera's viewfinder in between or to the side of coupling band **10a** and coupling band **10b**. The exact positioning of the camera inside coupling band **10a** and coupling band **10b**, or rather the positioning of coupling band **10a** and coupling band **10b** around the camera body, is variable to allow cameras of various shapes, sizes, and dimensions to fit into a single version of harness **1a**.

[0094] Once the operator has secured the camera within coupling band **10a** and coupling band **10b** he or she then drapes harness **1a** across his or her left arm, at or above the wrist, so that the hook and loop fastening side of harness **1a** is facing up and pull tab **21** end of harness **1a** is closest to the operator's body. The operator then feeds pull tab **21** end of harness **1a** through square ring **14** and cinches pull tab **21** end of harness **1a** until harness **1a** has a desired tension around the operator's wrist or arm. The operator then fastens hook material **20** to loop material **17** to maintain the desired tension of harness **1a** around the operator's wrist or arm. At this point harness **1a** and the attached camera are fastened to the operator's left wrist or arm.

[0095] From this point, the operator may grasp the camera with his or her right hand and raises the camera. The operator may, but is not required, to move his or her left wrist or arm up close to his or her face for the purpose of looking through the camera's viewfinder to take a photograph, as illustrated in Fig. 3a. The operator can easily pivot the camera into an upright position to facilitate looking through the viewfinder, as illustrated in Fig. 3a. The right hand is in position to hold the camera and push the camera's shutter button to take a photograph while the left arm serves as a support to help hold the camera steady for a clear photographic exposure.

[0096] One advantage of the present invention is that in the event the user slips, falls, or otherwise needs both hands immediately free, he or she can let go of the camera to do what is necessary to ensure their safety. The camera remains attached to harness **1a** and the operator (Fig. 3b) by way of the camera-to-harness **1a** coupling system comprised of coupling band **10a**, coupling band **10b**, coupling plate **10**, catch piece **13**, and pivot sleeve **15**.

[0097] Once the operator is done taking a photograph and wishes to position the camera in a secure carry position, he or she can quickly secure the camera into a flat and stable position on his or her arm or wrist. To do this, the operator may use his or her right hand to pivot the camera into a flat position on his or her wrist (Fig. 3) and then may use his or her right thumb or thumb and index finger, whichever method is desired, to push or pull hook piece **19** up and into catch piece **13** until hook end **19b** is mated into catch cradle **13d**. At this point, hook piece **19** will be securely mated with catch piece **13**. This will secure the camera in a flat carry position on the operator's arm or wrist.

[0098] At this point the operator can freely use their left arm and hand without upsetting, loosening, or otherwise releasing the camera from its secure, flat positioning on his or her arm or wrist. If a tighter, more secure fit is desired, the operator can increase the tension of harness **1a** around his or her arm or wrist which will also increase the tension of hook ring **18** and hook **19** holding the camera down flat against the arm or wrist of the operator.

[0099] To install safety band **22** (Fig. 4) the operator attaches safety band **22** to the camera in the same cinching fashion that he or she would attach a standard rubber band to the attachment bar or loop that is a featured element on most cameras. Once safety band **22** is securely cinched to the camera, the operator unfastens hook material **20** from loop material **17** and guides hook material **20** through the open end of safety band **22**, pulling safety band **22** close to square ring

14 in the process. The operator then refastens hook material **20** to loop material **17**, sandwiching safety band **22** between hook material **20** and loop material **17**, thus securing safety band **22** to harness **1a**, as illustrated in Fig. 4.

[0100] It is noted that to remove harness **1a** from his or her wrist, the operator simply unfastens hook material **20** from loop material **17** and slides harness **1a** off of his or her wrist. In addition, to remove the camera from harness **1a**, the operator simply pulls or stretches coupling band **10a** and coupling band **10b** off of the camera. It is also noted that although the example above is discussed with respect to particular right and left hand usage, a vice versa operational usage or a combination of appendages (e.g., attach camera harness to leg) and use right or left hand to take picture) is also within the principles of the present invention.

ADDITIONAL ALTERNATIVE EMBODIMENTS

[0101] The present invention may be designed and operated in a variety of configurations without departing from the spirit and the scope of the invention. For example, the present invention may be configured in a number of ways in regards to the size, shape, positioning, orientation and materials of the various elements of the invention. More particularly, for example, as illustrated in Fig. **1b**, loop material **17**, hook material **20**, comfort strip **16**, square ring **14**, and pull tab **21** can be replaced with a single sleeve **24** of any material including but not limited to neoprene, nylon, cotton, rubber, or polypropylene, whereby single sleeve **24** is used to attach harness **1b** to the arm or wrist of a user whereby the user slides his or her hand through single sleeve **24** and pulls single sleeve **24** and harness **1b** onto his or her wrist or arm.

Additionally, single sleeve **24** can have in any way attached to it hook and loop material that serves as a compression strap to increase the tension of single sleeve **24** around the wrist or arm of the user. This hook and loop compression strap can include a square ring allowing the user to cinch the hook and loop material and single sleeve **24** tighter around his or her arm or wrist.

[0102] In addition, as illustrated in Fig. 1c, coupling plate **10** can be replaced with a spring loaded coupling plate **25**, whereby spring loaded coupling plate **25** has a spring **25a** that applies pressure to spring loaded coupling plate **25** in such a manner that spring loaded coupling plate **25** holds whichever camera is being used with harness **1c** in a flat position against the operator's wrist or arm. The operator can then apply rotational pressure against the camera and spring loaded coupling plate **25** to compress spring **25**, thus pivoting the camera into an upright position for taking a photograph.

[0103] Upon release of such pressure by the operator, spring **25** would then force the camera back into a flat position on the arm or wrist of the operator, against back plate **25c**, which is attached to both coupling plate **25** and loop material **17**. Additionally, the bottom portion of spring loaded coupling plate **25** can extend to a length similar to that of back plate **25c** whereby coupling band **10a** and coupling band **10b** attach to the bottom portion of spring loaded coupling plate **25** in a manner similar to how coupling band **10a** and coupling band **10b** attach to coupling plate **25b** in Fig. 1f.

[0104] In yet another embodiment, as illustrated in Fig. 1d, coupling plate **10** can be replaced with a strip or tongue of hook material **26** that is attached to loop material **17** and can be looped through an extended bar **29** or recessed groove and bar **30** on a camera body **28** or camera housing **32**. Tongue of hook material **26** would then be folded back and mated with loop material **17**, thus attaching camera body **28** or camera housing **32** to harness **1d** in a manner that would allow camera body **28** or camera housing **32** to be moved pivotably while attached to harness **1d**. Additionally, one end of tongue of hook material can be sewn, welded or otherwise attached to pivot sleeve **15**.

[0105] As illustrated in Fig. 1e, coupling plate **10** can be replaced with a male buckle or male clip **27** that could be clipped into a mating female clip **31** integrated into camera body **28** or

camera housing **32**, thereby attaching camera body **28** or camera housing **32** to harness **1e** in a manner that allows camera body **28** or camera housing **32** to be moved pivotably while attached to harness **1e**. Alternately, male clip **27** as illustrated in Fig. 1e can be substituted with female clip **31** and female clip **31** on camera body **28** can be substituted with male clip **27**. Any type of male or female clip, connector or union can be used as a substitute and the illustration in Fig. 1e is only for example reference. Alternatively, male clip **27** and female clip **31** can be substituted with joining parts similar to those used to attach a wristwatch band to a watch piece, for example, a magnetic resistance.

[0106] As illustrated in Fig. 1f, coupling plate **10** can be replaced with a spring loaded coupling plate **25b** whereby coupling band **10a** and coupling band **10b** attach to spring loaded coupling plate **25b**, as illustrated. Further, as illustrated in Fig. 1g, coupling plate **10** can be replaced with a spring loaded clip **33** that can be attached or clipped to a camera body or housing. Additionally, the spring loaded clip can be attached to a recessed groove and bar **30** (Fig. 8d) or an extended bar **29** (Fig. 8c) on a camera body or camera housing. As an alternative, spring loaded clip **33** can be held closed with something other than a spring, for example, a magnetic resistance.

[0107] As illustrated in Fig. 1h, coupling plate **10** can be replaced with a static clip **34** that can be attached or clipped to a camera body or housing. Additionally, the spring loaded clip can be attached to a recessed groove and bar **30** (Fig. 8d) or an extended bar **29** (Fig. 8c) on a camera body or camera housing. Further, as illustrated in Fig. 1i, coupling plate **10** can be replaced with a tongue of hook material **26** that is sewn, welded, or otherwise attached to loop material **17** at or near pivot sleeve **15**. The hook side of tongue of hook material **26** is facing down in Fig. 1i and can be pushed through an extended bar **29** or recessed groove and bar **30** on a camera body or camera housing and then mated with loop material **17** to secure a camera or a camera housing to

harness **1i** in a manner that allows the camera body or camera housing to be moved pivotably while attached to harness **1i**. It is noted that the camera body is rigid or substantially rigid. The camera housing may be rigid, substantially rigid, flexible (e.g., leather, vinyl, neoprene, spandex or the like) or substantially flexible.

[0108] In an alternative embodiment, tongue of hook material **26** can be replaced with a tongue of loop material. Alternatively, tongue of hook material **26** can have a button attached to it that mates with a mating button that is attached to either a camera body, a camera housing, or loop material **17**. Alternatively, tongue of hook material **26** can have one side coated with an adhesive that attaches to a camera body or camera housing.

[0109] Additionally, harness **1e** can have an additional tongue of loop material sewn or otherwise attached to loop material **17** in such a manner that allows it to be folded over tongue of hook material **26** after tongue of hook material **26** is mated with loop material **17**, assuming that tongue of hook material **26** has hook material or Velcro lining both sides of tongue of hook material **26**. This additional tongue of loop material, once folded over tongue of hook material **26**, will further secure tongue of hook material **26** against loop material **17** and further secure the attached camera body or camera housing to harness **1i**.

[0110] Additionally, tongue of hook material **26** can have loop material on the side or face that does not mate with loop material **17** so that hook material **20** can mate with tongue of hook material **26** when harness **1i** is cinched around a user's arm or wrist. Additionally, harness **1i** can have sewn or otherwise attached to it a length of hook and loop material that folds or doubles over tongue of hook material **26**, further securing tongue of hook material **26** to loop material **17** when mated.

[0111] As illustrated in Fig. 1j, coupling plate **10** can be replaced with a tongue of hook material **26** that is sewn, welded, mated, or otherwise attached to loop material **17**. The hook side

of tongue of hook material **26** is facing down in Fig. 1j and can be pushed through an extended bar **29** or recessed groove and bar **30** on a camera body or camera housing and then pushed through square ring **14** and mated with loop material **17** on the underside of harness **1j** to secure a camera or a camera housing to harness **1j** in a manner that allows the camera body or camera housing to be moved pivotably while attached to harness **1j**. Additionally, loop material **17** can be extended to attach, by any means suitable for attaching two lengths of fabric together, to the underside of harness **1j** to serve as a mating surface for tongue of hook material **26** and likewise provide a comfortable surface for contacting the skin of a user. Patch **170** can be optionally omitted and hook ring **18** can be sandwiched between the two layers of loop material **17** and held in place by union **170a** and union **170b**. Additionally, comfort strip **16** and pull tab **21** can be optionally omitted in harness **1j**. Additionally, loop material **17** can be double sided or double faced loop material.

[0112] Fig. 1k illustrates an alternative strap or harness **1k** that can be used with an improved camera body **28** or an improved camera housing **32** to attach a camera to a user in a fixed flat or fixed upright position. For example, harness **1k** can be laced or pushed under extended bar **29** featured on the improved camera housing **32** illustrated in Fig. 9g and then cinched around the arm or wrist of a user, thus securing the improved camera housing **32** to the user in a fixed flat position. A view hole **36** can be variably positioned or cut out of harness **1k** during manufacture or through user positioning so as to allow the user to look through harness **1k** to see through the camera's viewfinder in the event that harness **1k** would otherwise block the user's view of the viewfinder, as could be the case if harness **1k** were attached to the improved camera housing **32** as illustrated in Fig. 9i. The view finder may also comprise a transparent material.

[0113] Note that in some embodiments, the housing may also include a view area through which a display, e.g., a 2" LCD screen can be viewed. This view area may be exposed or covered with a transparent material. In addition, this area may also include an exposed or covered (e.g., pliable transparent material) to manipulate the buttons associated with camera functionality, e.g., cycle through captured images viewable on the display. It is also noted that the camera housing can be rigid (or substantially rigid) (e.g., plastic, metal, fiberglass, etc.) or pliable (or substantially pliable) (e.g., leather, vinyl, neoprene, etc.). Also, the camera housing can be integrated with or separate from the camera (or other device) itself. Moreover, the camera housing may be appropriately configured for use in various elements (e.g., waterproof or atmospheric).

[0114] Alternatively, harness **1k** can be laced or pushed through an extended bar **29** located on the bottom of improved camera body **28** or improved camera housing **32**, as illustrated in Fig. 9k and then cinched around the arm or wrist of a user thereby attaching the camera to the user in a fixed upright position. Alternatively, harness **1k** can be laced or pushed through any combination of extended bar **29**, extended bar **35**, and or recessed groove and bar **30** on improved camera body **28** or improved camera housing **32** to secure improved camera body **28** or improved camera housing **32** to a user in either a fixed flat or fixed upright position on the arm or wrist of a user. Harness **1k** can alternatively be configured from various materials including but not limited to e.g., nylon, plastic, metal, foam, polypropylene, webbing, rubber, neoprene, single or double sided tape, laminated adhesive, and/or Velcro®. Additionally, view hole **36** can be alternatively omitted from harness **1k**.

[0115] Fig. 11 illustrates an alternative harness **1l** that incorporates an attachment pad **37** that can be sewn, glued, taped, stapled, stamped, or otherwise attached or made part of harness **1l**. Attachment pad **37** can be made of a variety of different materials, including but not limited

to neoprene, plastic, metal, rubber, webbing, nylon, double sided tape, foam, Velcro®, etc. One side of attachment pad 37 can have an adhesive layer or laminate applied to it allowing a user or manufacturer to adhere attachment pad 37 and thus harness 11 to a side of a camera or camera housing in order to then attach harness 11 and a camera or camera housing to themselves in a fixed flat or fixed upright position. Harness 11 can include view window 37 that can be variably positioned by user or at time of manufacture or view window 37 can be omitted from harness 11.

[0116] Fig. 1m illustrates an alternative embodiment harness 1m of the invention whereby hook piece 19 replaces catch piece 13 and is attached to coupling band 10a and coupling band 10b by stretching and pulling coupling band 10a and coupling band 10b firmly into anchor groove 19a. This allows hook ring 18 to be pulled onto hook piece 19 and rest in hook end 19b, securing a camera in a first secure flat carry position when a camera is attached to harness 1m and harness 1m is attached to a user. This embodiment advantageously allows the user to pull or push the camera into a second secured upright position for the purpose of taking a photograph, stretching hook ring 18 in the process.

[0117] To return the camera to the first secure flat carry position the user releases pressure on the camera and the tension of hook ring 18 will pull the camera back down into the first secure flat position. Hook piece 19 can be removed from hook ring 18 in any of the embodiments of the invention to allow for hook ring 18 to attach to hook piece 18 or hook piece 38 (Fig. 8n) in this alternative fashion to accomplish this embodiment of the invention. Additionally, hook piece 19 can be fabricated, molded, or otherwise created as one piece combined with coupling band 10a and coupling band 10b and or with any of their embodiments. Additionally, hook piece 19 can be fabricated, molded, or otherwise created in separate pieces or halves that are sandwiched around coupling band 10a and coupling 10b or their embodiments when assembled.

[0118] Fig. 8n illustrates an embodiment of camera body 28 that has a hook piece 38, serving the same purpose as hook piece 19 on harness 1m, integrated onto the top of camera body 28. Alternatively, hook piece 38 can be molded, made, fastened, glued, taped, or otherwise attached to the top, back, front, bottom, or side, including corner edges, of camera body 28. Hook piece 38 can be made of plastic, metal, rubber, or any other material suitable for attaching to a camera or camera housing.

[0119] Fig. 9n illustrates an embodiment of camera body that has a hook piece 38, serving the same purpose as hook piece 19 on harness 1m, integrated onto the top of camera housing 32. Alternatively, hook piece 38 can be molded, made, fastened, glued, taped, or otherwise attached to the top, back, front, bottom, or side, including corner edges, of camera housing 32. As an alternative, hook ring 18 can attach to camera body 28 or camera housing 32 in any manner suitable for firmly attaching hook ring 18 or any of its alternative embodiments to camera body 28 or camera housing 32 in order to hold a camera in a first secured flat position and then allowing for hook ring 18 or any of its embodiments to be stretched as the user raises a camera into a second secure upright position when being worn by a user using a harness of the invention.

[0120] As illustrated in Fig. 8a, the invention can include camera body 28 that has catch piece 13 integrated on top of camera body 28. Alternatively, catch piece 13 can be integrated onto the back of camera body 28. Additionally, catch piece 13 can be integrated onto a corner edge of camera body 28. Additionally, catch piece 13 can have an adhesive coated side that attaches it to camera body 28. Additionally, camera body 28 can have an adhesive area that allows catch piece 13 to be attached to it. Additionally, camera body 28 can have hook or loop material, or Velcro® attached to or embedded into camera body 28 on any side of camera body 28. Additionally, camera body 28 can have hook or loop material, or Velcro® attached to or

embedded into camera body 28 on any side of camera body 28, replacing catch piece 13 or included with catch piece 13.

[0121] As illustrated in Fig. 8b, the invention can include camera body 28 that has catch piece 13 integrated into or within the top of camera body 28. Alternatively, catch piece 13 can be integrated into or within the back of camera body 28. Alternatively, catch piece 13 can be integrated into or within a corner edge of camera body 28.

[0122] As illustrated in Fig. 8c, the invention can include camera body 28 that has an extended bar 29 integrated onto the back of camera body 28. Alternatively, extended bar 29 can be integrated onto the bottom, top or corner edge of camera body 28. As illustrated in Fig. 8g, extended bar 29 can be of any width or height and can be integrated into or onto camera body 28 in any location on the back, front, top, or bottom of camera body 28, again including corner edges. Alternatively to extended bar 29 being manufactured as an integrated element of camera body 28, extended bar 29 can be manufactured as a separate piece and can be glued, taped, welded, fastened, clipped, screwed, riveted, attached with hook and loop material, or otherwise attached to camera body 28. As illustrated in Fig. 8i, a plurality of extended bar 29 can be integrated onto or into camera body 28 and again can be integrated in any location on the back, front, top, or bottom of camera body 28, including corner edges.

[0123] Extended bar 29 can serve alternate functions in the invention, for example, functioning as a mating piece for hook 19, thus acting as substitute for catch piece 13 or extended bar 35, when positioned on or near the top or top back area of camera body 28, or alternately serving as an attachment point for a harness strap of the invention when positioned in the same location or anywhere else on the top, back, bottom or corner edge of camera body 28. In this way extended bar 29 can serve multiple functions in the same embodiment, allowing a single embodiment of the invention to be used in a variety of configurations depending on user

or manufacturer preference. For example, by serving as weave-through attachment points for harness **1k** to be woven through, both extended bars **29** in Fig. 8i function in a manner that attaches camera body **28** to a user in a fixed flat position.

[0124] Alternatively, by substituting harness **1j** as the harness strap of choice and attaching it via tongue of hook material **26** to the lower extended bar **29** in Fig 8i, the upper extended bar **29** can now function as a mating point for hook **19** of harness **1j**, allowing the camera to be moved pivotably from either a secured flat position whereby hook **19** is mated with upper extended bar **29**, or released and pivoted into a second secure upright position for taking a photo. In sum, it should be noted that that the present invention beneficially allows for a camera body or housing to accept any variety of strap that allows the camera to attach to a user, e.g., an appendage of the user, in either a fixed or pivoting manner as disclosed herein.

[0125] Additionally, variable placement of extended bar **29** in conjunction with straps such as harness **1k** allow for camera body **28** to be attached to a user in a fixed-angle or semi-upright position. For example, Fig. 8m illustrates camera body **28** with extended bars **29** positioned on the back and bottom sides of camera body **28**. By weaving harness **1k** through both the back and bottom extended bars **29** and cinching harness **1k** around the wrist or arm of a user, camera body **28** can be attached to the user in a fixed-angle or semi-upright position. Alternatively, harness **1k** can be woven through both the back and bottom extended bars **29** and also extended bar **35** positioned on the top back corner of camera body **28** (fig. 8m) in order to attach camera body **28** to a user in a fixed flat manner. Alternatively, harness **1j** can be attached via tongue of hook material **26** to the bottom extended bar **29** and hook **19** of harness **1j** can mate with extended bar **35**, thereby allowing camera body **28** (Fig. 8m) be attached to a user in a manner that allows camera body **28** to be secured flat in a first secure position and then released and pivoted upright into a second secured position.

[0126] The aforementioned and following examples of variable configurations of the invention are but examples of the potential variations and in no way should the invention be limited to the aforementioned or following examples of variable configurations of the invention.

[0127] As illustrated in Fig. 8d, the invention can include camera body **28** that has a recessed groove and bar **30** on the back of camera body **28**. Alternatively, recessed groove and bar **30** can be positioned on the bottom and or top of camera body **28** or into or within a corner edge of camera body **28**. Fig. 8h illustrates that recessed groove and bar **30** can be of any width or depth, and the bar portion of recessed groove and bar **30** can be either flush with or recessed below the outer surface of camera body **28**. Additionally, Fig. 8h illustrates that recessed groove and bar **30** can be located anywhere on the top, back, or bottom of camera body **28**, including corner edges of camera body **28**. Fig. 8j illustrates a plurality of recessed groove and bar **30** integrated into camera body **28**.

[0128] Recessed groove and bar **30**, extended bar **29**, and extended bar **35** can be used in any combination with or in any substitution of one another. Fig. 8k and fig. 8l illustrate examples of this. Additionally, recessed groove and bar **30**, extended bar **29**, and extended bar **35** can be used interchangeably to achieve similar functionality. For example, fig. 8l shows extended bar **29** positioned on the top back corner of camera body **28** whereby it can substitute for extended bar **35** as a mating bar for hook **19** of harness **1j**, or it can serve as an weave-through attachment point for a substitute harness **1k** to be woven through in order to attach camera body **28** to a user in a fixed flat position when harness **1k** is also woven through recessed groove and bar **30** in this example. Additionally, recessed groove and bar **30** can alternately be used as a mating bar for hook **19** and extended bar **35** can be alternately used as an attachment point for alternative strap embodiments of the invention.

[0129] As illustrated in Fig. 8e, the invention can include a camera body **28** that has a female clip **31** integrated on the bottom of camera body **28**. Alternatively, female clip **31** can be integrated onto the back of camera body **28**. Alternatively, female clip **31** can be substituted with male clip **27**. Any type of male or female clip, connector or union can be used as a substitute for female clip **31** and male clip **27** and the illustration in Fig. 8e is intended only for reference. Alternatively, male clip **27** and female clip **31** can be substituted with joining parts similar to those used to attach a wristwatch band to a watch piece.

[0130] As illustrated in Fig. 8f, the present invention can include camera body **28** that has an extended bar **35** integrated on top of camera body **28** to mate with hook piece **19**.

Alternatively, extended bar **35** can be integrated onto the back of camera body **28**. Additionally, extended bar **35** can be integrated onto a corner edge of camera body **28**. Further, extended bar **35** and extended bar **29** can be partially or entirely of any shape, including but not limited to curved, rounded, indented, semi-circular, circular, semi-oval, oval, semi-elliptical, elliptical, semi-square, square, semi-rectangular, rectangular, semi-triangular, triangular, or angular shape. Also, extended bar **35** and extended bar **29** can be of any width or height and can be variably positioned on the top, back or corner of camera body **28**. Alternatively, extended bar **35** can function as an attachment point for a strap portion of the invention, similar in function to either recessed groove and bar **30** and or extended bar **29**. Again, extended bar **35**, recessed groove and bar **30**, and extended bar **29** can be used interchangeably in the invention.

[0131] As illustrated in Fig. 9a, the invention can include camera housing **32** that has catch piece **13** integrated on top of camera housing **32**. Alternatively, catch piece **13** can be integrated onto the back of camera housing **32**. Additionally, catch piece **13** can be integrated onto a corner edge of camera housing **32**. Additionally, catch piece **13** can have an adhesive coated side that attaches it to camera housing **32**. Additionally, camera housing **32** can have an adhesive area that

allows catch piece 13 to be attached to it. Additionally, camera housing 32 can have hook or loop material, or Velcro® attached to or embedded into camera housing 32 on any side of camera housing 32. Additionally, camera housing 32 can have hook or loop material, or Velcro® attached to or embedded into camera housing 32 on any side of camera housing 32, replacing catch piece 13 or included with catch piece 13.

[0132] As illustrated in Fig. 9b, the invention can include camera housing 32 that has catch piece 13 integrated into or within the top of camera housing 32. Alternatively, catch piece 13 can be integrated into or with the back of camera housing 32. Alternatively, catch piece 13 can be integrated into or within a corner edge of camera housing 32.

[0133] As illustrated in Fig. 9c, the invention can include camera housing 32 that has an extended bar 29 integrated onto the back of camera housing 32. Alternatively, extended bar 29 can be integrated onto the bottom, top or corner edge of camera housing 32. As illustrated in Fig. 9g, extended bar 29 can be of any width, height or thickness and can be integrated into or onto camera housing 32 in any location on the back, front, top, or bottom of camera housing 32, again including corner edges.

[0134] As an alternative to extended bar 29 being manufactured as an integrated element of camera housing 32, extended bar 29 can be manufactured as a separate piece and can be glued, taped, welded, fastened, clipped, screwed, riveted, attached with hook and loop material, or otherwise attached to camera housing 32. As illustrated in Fig. 9i, a plurality of extended bar 29 can be integrated onto or into camera housing 32 and again can be integrated in any location on the back, front, top, or bottom of camera housing 32, including corner edges.

[0135] Extended bar 29 can serve alternate functions in the invention, for example, functioning as a mating piece for hook 19, thus acting as substitute for catch piece 13 or extended bar 35, when positioned on or near the top or top back area of camera housing 32, or

alternately serving as an attachment point for a strap portion of the invention when positioned in the same location or anywhere else on the top, back, bottom or corner edge of camera housing 32. In this way extended bar 29 can serve multiple functions in the same embodiment, allowing a single embodiment of the invention to be used in a variety of configurations depending on user or manufacturer preference. For example, by serving as weave-through attachment points for harness 1k to be woven through, both extended bars 29 in Fig. 9i function in a manner that attaches camera housing 32 to a user in a fixed flat position.

[0136] Alternatively, by substituting harness 1j as the harness strap of choice and attaching it to the lower extended bar 29 in Fig 9i, the upper extended bar 29 can now function as a mating point for hook 19 of harness 1j, allowing the camera to be moved pivotably from either a secured flat position with hook 19 mated with upper extended bar 29 or released and pivoted into a second secure upright position for taking a photo. Again, it is noted that the present invention is also applicable to other viewing configurations, for example, video or long-distance viewers (monocular or binoculars).

[0137] Additionally, variable placement of extended bar 29 in conjunction with straps such as harness 1k allow for camera housing 32 to be attached to a user in a fixed-angle or semi-upright position. For example, Fig. 9m illustrates camera housing 32 with extended bars 29 positioned on the back and bottom sides of camera housing 32. By weaving harness 1k through both the back and bottom extended bars 29 and cinching harness 1k around the wrist or arm of a user camera housing 32 can be attached to the user in a fixed-angle or semi-upright position.

[0138] Alternatively, harness 1k can be woven through both the back and bottom extended bars 29 and also extended bar 35 positioned on the top back corner of camera housing 32 (Fig. 9m) in order to attach camera housing 32 to a user in a fixed flat manner. Alternatively, harness 1j can be attached via tongue of hook material 26 to the bottom extended bar 29 and hook 19 of

harness 1j can mate with extended bar 35, thereby allowing camera housing 32 (Fig. 9m) be attached to a user in a manner that allows camera housing 32 to be secured flat in a first secure position and then released and pivoted upright into a second secured position.

[0139] As illustrated in Fig. 9d, the invention can include camera housing 32 that has a recessed groove and bar 30 on the back of camera housing 32. Alternatively, recessed groove and bar 30 can be positioned into the bottom and or top of camera housing 32 or into the bottom corner edge of camera housing 32. Fig. 9h illustrates that recessed groove and bar 30 can be of any width or depth, and the bar portion of recessed groove and bar 30 can be either flush with or recessed below the outer surface of camera housing 32. Additionally, Fig. 9h illustrates that recessed groove and bar 30 can be located anywhere on the top, back, or bottom of camera housing 32, including corner edges of camera housing 32. Fig. 9j illustrates a plurality of recessed groove and bar 30 integrated into camera housing 32.

[0140] Recessed groove and bar 30, extended bar 29, and extended bar 35 can be used in any combination with or in any substitution of one another. Fig. 9k and Fig. 9l illustrate examples of this. Additionally, recessed groove and bar 30, extended bar 29, and extended bar 35 can be used interchangeably to achieve similar functionality. For example, Fig. 9l shows extended bar 35 positioned on the top back corner of camera housing 32 whereby it can be substituted with extended bar 29 as a mating bar for hook 19 of harness 1j, or it can serve as an weave-through attachment point for a substitute harness 1k to be woven through in order to attach camera housing 32 to a user in a fixed flat position when harness 1k is also woven through recessed groove and bar 30 in this example. Additionally, recessed groove and bar 30 can alternately be used as a mating bar for hook 19 and extended bar 35 can be alternately used as an attachment point for a strap portion of the invention.

[0141] As illustrated in Fig. 9e, the invention can include a camera housing **32** that has a female clip **31** integrated on the bottom of camera housing **32**. Alternatively, female clip **31** can be integrated onto the back of camera housing **32**. Alternatively, female clip **31** can be substituted with male clip **27**. Any type of male or female clip, connector or union can be used as a substitute for female clip **31** and male clip **27** and the illustration in Fig. 9e is intended only for reference. Alternatively, male clip **27** and female clip **31** can be substituted with joining parts similar to those used to attach a wristwatch band to a watch piece.

[0142] As illustrated in Fig. 9f, the present invention can include camera housing **32** that has an extended bar **35** integrated on top of camera housing **32** to mate with hook piece **19**. Alternatively, extended bar **35** can be integrated onto the back of camera housing **32**. Additionally, extended bar **35** can be integrated onto a corner edge of camera housing **32**. Additionally, extended bar **35** and extended bar **29** can be partially or entirely of any shape, including but not limited to curved, rounded, indented, semi-circular, circular, semi-oval, oval, semi-elliptical, elliptical, semi-square, square, semi-rectangular, rectangular, semi-triangular, triangular, or angular shape. Additionally, extended bar **35** and extended bar **29** can be of any width or height and can be variably positioned on the top, back or corner of camera housing **32**. Alternatively, extended bar **35** can function as an attachment point for a strap portion of the invention, similar in function to either recessed groove and bar **30** and or extended bar **29**. Again, extended bar **35**, recessed groove and bar **30**, and extended bar **29** can be used interchangeably in the invention.

[0143] It will be noted that any of the stated embodiments of the invention, or elements thereof, can be combined or otherwise incorporated with one another to achieve a desired embodiment of the invention that is still within the scope of the invention.

[0144] In addition to the aforementioned methods for attaching my invention to the wrist or arm of a user, it is understood that any reasonable means for attaching, securing, or otherwise fastening a device to the wrist or arm of a user can be substituted for any of the above mentioned methods of attaching my invention to the wrist or arm of a user. In addition to the aforementioned methods for attaching a camera to my invention, it is understood that any reasonable means for attaching, securing, or otherwise fastening a camera to a harness or strap can be substituted for any of the above mentioned methods of attaching a camera to my invention.

FURTHER CONSIDERATIONS FOR ADDITIONAL EMBODIMENTS

[0145] Those of skill in the art will understand the wide range of structural configurations for one or more elements of the present invention. For example, certain elements may have square or rounded edges to give it a particular look. Further, particular elements of the present invention that are joined or attached to one another in the assembly process can be made, molded, machined, or otherwise fabricated as a single element or part. In addition, certain elements of the present invention that are fabricated as a single element or part can be fabricated as separate elements or in a plurality of parts that are then joined or otherwise attached to one another in the assembly process. Certain elements of the present invention that are made of a particular material can be made of a different material to give the device a different appearance, style, weight, flexibility, rigidity, reliability, longevity, ease of use, cost of manufacture, etc.

[0146] Certain elements of the present invention may be configured to be bigger or smaller to work with cameras of different sizes. Further, certain elements of the present invention can be made bigger or smaller to better fit or adjust to people of different sizes or better fit over various articles of clothing. Elements of the present invention can be sewn or otherwise attached

to the sleeve of a jacket, shirt, sweater, pullover, wetsuit, glove or other form of apparel, thus integrating the function of my invention into the given article of apparel.

[0147] As further examples, the present invention or elements thereof could be built into or otherwise permanently affixed to a camera body or camera housing in a manner that permanently attaches the present invention to the camera body or camera housing. In addition, a base plate, clip, or other part in place of coupling plate **10** could snap, bolt, clip, or otherwise attach the present invention to a camera body or a camera housing, thus attaching that camera body or camera housing to the present invention with or without the use of coupling bands **10a** and **10b**. Further, a base plate or other part in place of or in conjunction with coupling plate **10**, or coupling plate **10** itself can have one or more sides coated with an adhesive or adhesive tape for securing itself to a camera body or camera housing, thus attaching a camera body or camera housing to the present invention. Additionally, coupling plate **10** can have hook or loop material, Velcro, or a similar material glued to, laminated to, or otherwise attached to it.

[0148] As still additional examples, certain elements of the present invention can be made any color to give the present invention a specific appearance to match clothing, uniforms, camera color schemes, corporate logos, etc. Certain elements of the present invention can be redesigned for a different look, theme or to address a different consumer market.

[0149] In another example, certain elements of the present invention can be redesigned to attach or join with other elements of my invention in a different manner than described in the embodiments while providing a similar function to those manners of attachment described in the embodiments. Coupling plate **10** and square ring **14** can be fabricated as a single hinged part or element. Coupling plate **10** itself can be a hinged part or element that is fastened or attached to loop material **17**. Coupling plate **10** can be omitted from my invention and coupling bands **10a** and **10b** are attached to square ring **14** or are molded or fabricated as one part with square ring

14. Coupling plate **10** can be omitted from my invention and coupling bands **10a** and **10b** are attached to loop material **17**.

[0150] Another example includes, using a different clasping mechanism than hook piece **19** and catch piece **13**, including but not limited to an example where hook end **19b** is shaped like a ball and catch piece **13** and catch cradle **13d** are shaped like a cupped receptacle for the aforementioned ball shape. Further, instead of being shaped like dual bands surrounding the camera, coupling bands **10a** and **10b**, or coupling band **10a** alone, thus omitting coupling band **10b**, can be shaped like one single wide or narrow band of material surrounding the camera. Also, instead of being shaped like dual bands surrounding the camera, coupling bands **10a** and **10b**, or coupling band **10a** alone, thus omitting coupling band **10b**, can be shaped like one single wide or narrow band of material surrounding the camera with a hole or space omitted from a portion of the band of material for the camera lens to protrude from.

[0151] In addition, instead of using coupling bands **10a** and **10b**, my invention can include a sleeve of material such as neoprene, rubber, nylon, hook and loop material or any other material to grip, house or otherwise contain a camera and secure it to coupling plate **10**. This sleeve of material can additionally have a hole or space omitted from it to allow for the lens of a camera to protrude from it. Instead of using coupling bands **10a** and **10b** and coupling plate **10**, the present invention uses a sleeve of material such as neoprene, rubber, nylon, hook and loop material or any other material to grip, house or otherwise contain a camera which is attached directly to my invention without coupling plate **10**. This sleeve of material can additionally have a hole or space omitted from it to allow for the lens of a camera to protrude from it.

[0152] As another example, hook ring **18** can be any shape, including but not limited to a D-ring shape, triangle, oval, square, or can also be substituted with a single band or strip of any material including but not limited to hook and loop material. Loop material **17**, hook material

20, comfort strip 16, square ring 14, and pull tab 21 can be replaced with single sleeve 24 whereby single sleeve 24 is used to attach harness 1b to the arm or wrist of a user whereby the user slides his or her hand through single sleeve 24 and pulls single sleeve 24 and harness 1b onto his or her wrist or arm and single sleeve 24 has an integrated drawstring or a plurality of drawstrings that allow user to tighten single sleeve 24 around his or her wrist or arm.

Additionally, comfort strip 16 can be of any shape, single or varying width, or length.

[0153] In yet another example, as a substitute to comfort strip 16 in the present invention, single sleeve 24 is attached to underside of loop material 17 whereby single sleeve 24 is used to attach the present invention to the arm or wrist of a user whereby the user slides his or her hand through single sleeve 24 and pulls single sleeve 24 and harness 1b onto his or her wrist or arm and then cinches hook material 20 through square ring 14 and tightens the present invention onto his or her arm or wrist in the same manner as described in one embodiment of the present invention.

[0154] Also, loop material 17, hook material 20, comfort strip 16, square ring 14, and pull tab 21 can be replaced with a strap of any material with standard adjustable backpack type buckles at either end of the strap, allowing the user to buckle and tighten the present invention around their arm or wrist. Loop material 17, hook material 20, comfort strip 16, square ring 14, and pull tab 21 can be replaced with a standard wrist watch type strap and closure system that allows the user to adjust and fasten the present invention around his or her arm or wrist.

[0155] In another example, the present invention can be mounted on or otherwise integrated with a glove (or other article of clothing such as a coat sleeve or diver wetsuit sleeve) for the purpose of attaching a camera to the glove in a manner that allows the camera to be moved pivotably whilst being attached to the glove. The present invention can have a button attached to it that mates with a mating button piece located on a camera body. Also, the present

invention can have a button attached to it. Also the present invention can have a magnet or a portion thereof attached to it to serve as a coupling mechanism.

[0156] In yet another example, a camera (or a housing for a camera) used as a part of the invention could have either hook and or loop material attached, integrated, or otherwise a part of the camera body for the purpose of securing the camera against my invention or to an element thereof. The present invention can incorporate a one way or two way or stage detent mechanism that holds an attached camera either in a closed-flat position against the wrist or arm of a user or in an open-vertical position for the purpose of taking a photograph, or alternately in both positions depending on the user's preference. Any aspect or element of any one or more of the embodiments of my invention can be combined with any one or more aspects or elements of another embodiment of the present invention to achieve a desired combined embodiment of the present invention.

[0157] As previously noted, the present invention includes a number of benefits and advantages. For example, the present invention may be configured from a lesser number of parts, and therefore, is more reliable due to fewer potential failure points and may be less expensive to manufacture. Further, the present invention may be configured using lightweight material and may also be configured for attaching to a wide range of user extremities or appendages, for example, an arm, a wrist, a leg or an ankle, or even a non-appendages such as bicycle handlebars, hang glider control bars, a windsurfer boom, and so on. Hence, the present invention is advantageous for a wide range of potential users.

[0158] The present invention may also be adapted for a wider range of devices of varying shapes, sizes and dimensions, and therefore, is suitable for use with a wide range of devices that a user may carry, for example, cameras, binoculars, monoculars, video cameras cell phones, and the like. Further, the present invention may be beneficially secured in a first secured position

(e.g., secured at two ends to the harness) and a second secured position (e.g., pivotably secured at one end of the harness), and therefore, is also suitable for use in a wide range of activities.

[0159] Moreover, the present invention is advantageously secured while providing quick access for the user to the device attached to the harness so that the user can, for example, move a camera from the first secured position to the second secured position, take a photograph, and then re-secure the camera in the first secured position. In addition, the present invention is advantageously configured so that the device, e.g., camera, remains secured to the harness even if the user is unable to return the device from the first secured position to the second secured position.

[0160] Accordingly, one of skill in the art can appreciate that the camera harness of this invention can easily be used by a photographer to carry, access, and securely hold and use a camera even while participating in fast-paced activities such as surfing, kayaking, rafting, snorkeling, skiing, and so on. Additionally, the camera harness of this invention will keep a camera attached to the wrist or arm of a user even if the user falls or encounters some circumstance that forces him or her to let go of the camera while taking a photograph. The camera harness of the present invention can be easily used with a wide range of camera types, sizes, and dimensions and can likewise be adjusted to fit a wide range of users. Moreover, the camera harness of the present invention may also be adapted for use with other devices, for example, video cameras, binoculars, monoculars, cell phones, personal digital assistants, music players (e.g., Mp3 players or radio devices), game devices, and the like. Further still, the camera harness of the present invention will allow its user to take photographs while participating in such activities that might otherwise have prohibited or made difficult the act of photography. While the above description contains many specificities, these should not be construed as limitations on the scope of the invention, but rather as an exemplification of one preferred

embodiments thereof. Accordingly, the scope of the invention should be determined not by the embodiment(s) illustrated, but by the appended claims and their legal equivalents.